

# HP ProLiant BL35p Server Blade Maintenance and Service Guide



Part Number 379103-007  
February 2007 (Seventh Edition)

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### **Audience assumptions**

This guide is for an experienced service technician. HP assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels and are familiar with weight and stability precautions for rack installations.

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# Illustrated parts catalog

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## Customer self repair

### What is customer self repair?

HP's customer self-repair program offers you the fastest service under either warranty or contract. It enables HP to ship replacement parts directly to you so that you can replace them. Using this program, you can replace parts at your own convenience.

A convenient, easy-to-use program:

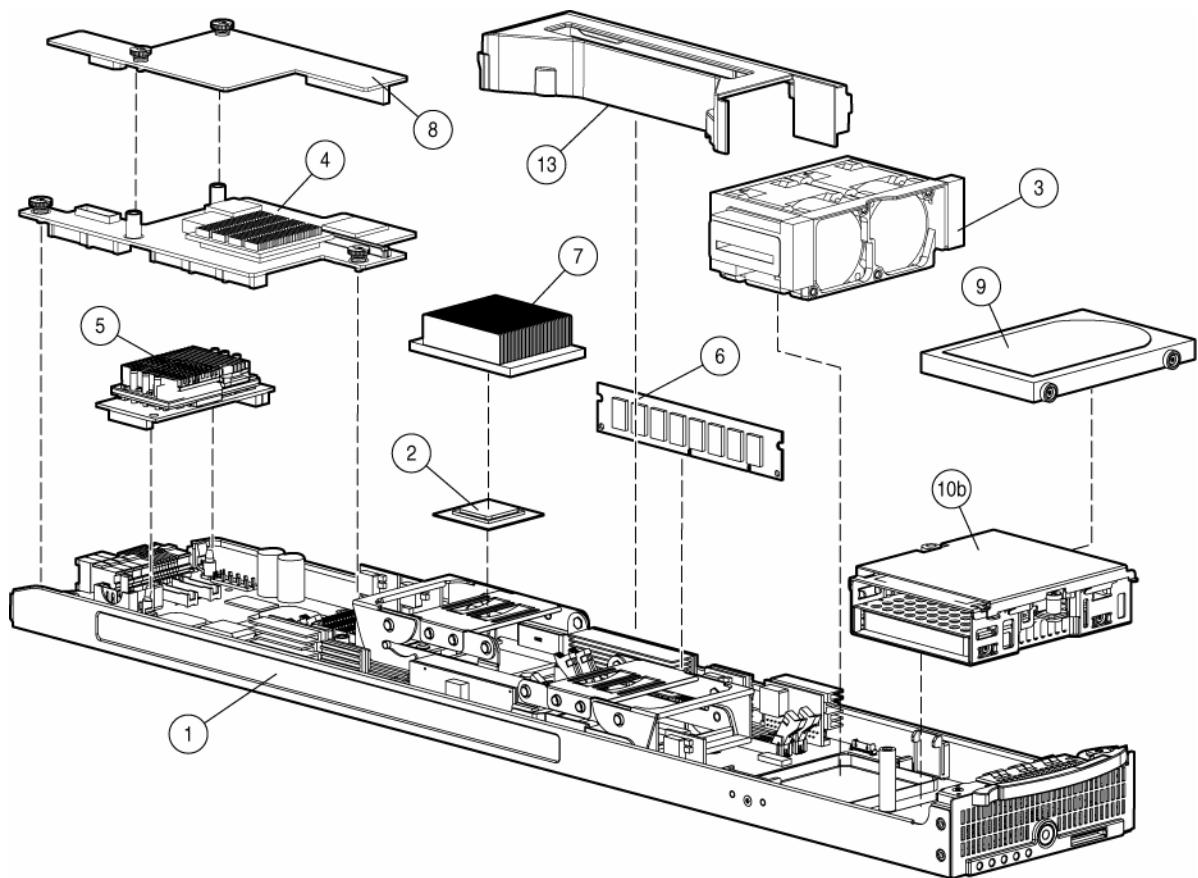
- An HP support specialist will diagnose and assess whether a replacement part is required to address a system problem. The specialist will also determine whether you can replace the part.
- Replacement parts are express-shipped. Most in-stock parts are shipped the very same day you contact HP. You may be required to send the defective part back to HP, unless otherwise instructed.
- Available for most HP products currently under warranty or contract. For information on the warranty service, refer to the HP website (<http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>).

For more information about HP's customer self-repair program, contact your local service provider. For the North American program, refer to the HP website (<http://www.hp.com/go/selfrepair>).

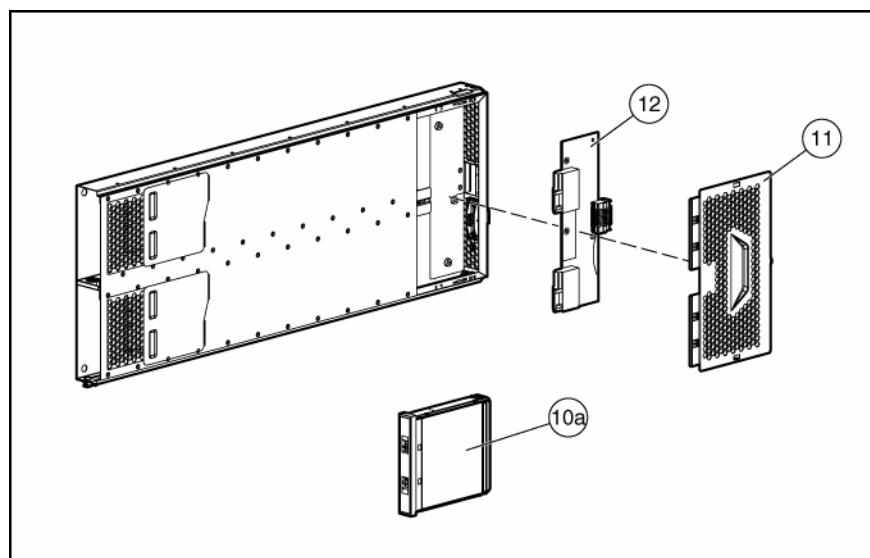
Customer replaceable parts are identified in the following tables.

# ATA models

## Server blade exploded view



## HP BladeSystem p-Class sleeve and blanks exploded view



## Spare parts list (ATA models)

**NOTE:** Always retain the server blade handle. The handle contains a serial number that maintains the original server blade warranty.

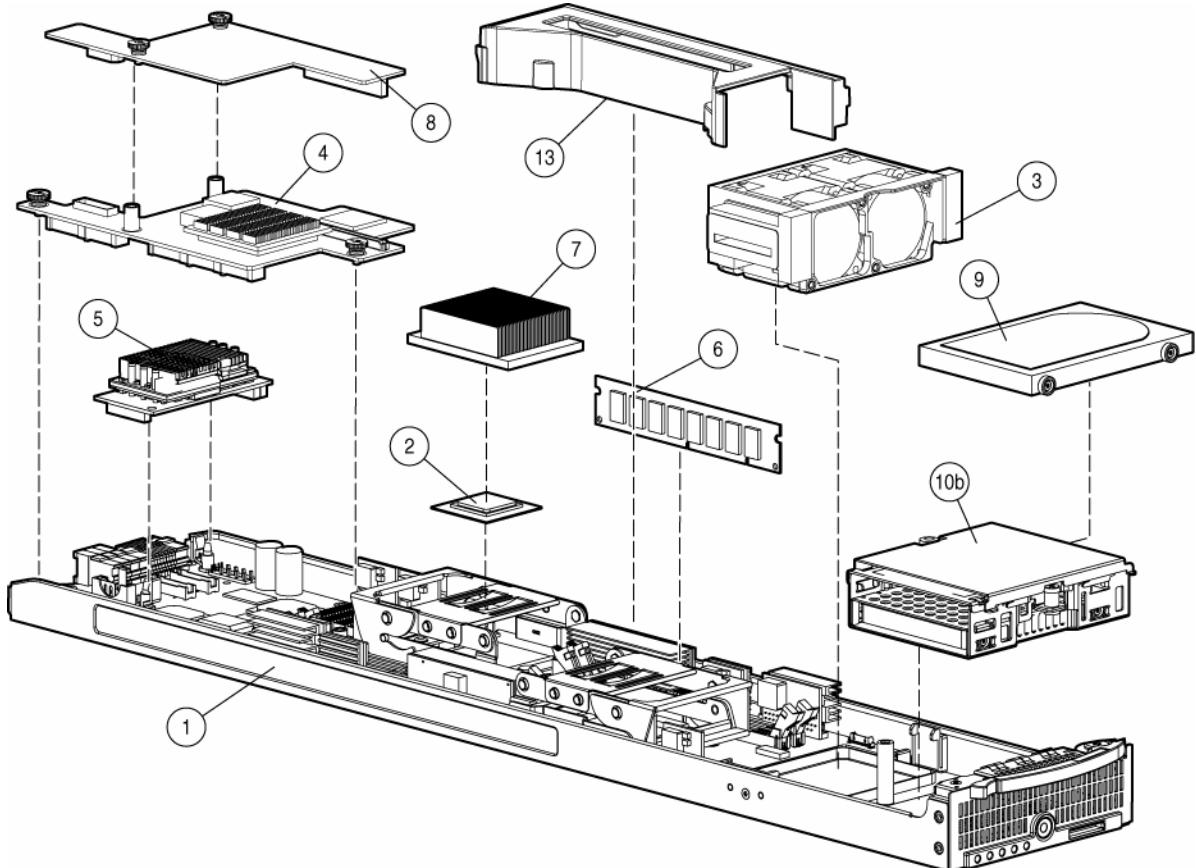
Item	Description	Spare part number	Customer replaceable?
	<b>Mechanical components</b>		
1	System board assembly, with two single-core heatsinks, two dual-core heatsinks, and LED board	381803-001	Yes
	<b>System components</b>		
2	Processor	—	—
	a) 2.4-GHz AMD Opteron™ single-core	381836-001	Yes
	b) 1.8-GHz AMD Opteron™ dual-core	395083-001	Yes
	c) 2.0-GHz AMD Opteron™ dual-core	395084-001	Yes
	d) 2.2-GHz AMD Opteron™ dual-core	395085-001	Yes
	e) 2.4-GHz AMD Opteron™ dual-core	414452-001	Yes
3	Fan assembly	361748-001	Yes
4	NIC riser board, mezzanine	361745-001	Yes
5	Power converter module	361752-001	Yes
	<b>Memory</b>		
6	DIMMs	—	—
	a) DIMM, 512-MB, PC3200 DDR 400-MHz SDRAM	381817-001	Yes
	b) DIMM, 1-GB, PC3200 DDR 400-MHz SDRAM	381818-001	Yes
	c) DIMM, 2-GB, PC3200 DDR 400-MHz SDRAM	381819-001	Yes
	d) DIMM, 4-GB, PC2700 DDR 333-MHz SDRAM	416258-001	Yes
	<b>Miscellaneous</b>		
7	Heatsinks	—	—
	a) Heatsink, single-core processor	381804-001	Yes
	b) Heatsink, dual-core processor	396768-001	Yes
8	Dual Port Fibre Channel Adapters (2 GB)	—	—
	a) QLogic-based Dual Port Fibre Channel Adapter (2-GB)	361744-001	Yes
	b) Emulex-based Dual Port Fibre Channel Adapter (2-GB)*	399852-001	Yes
9	Hard drive, 60-GB, ATA	361751-001	Yes
10	Hardware kit	361750-001	Yes
	a) 3U server blade blank	—	—
	b) Drive cage assembly	—	—
11	HP BladeSystem p-Class sleeve access panel	361881-001	Yes

Item	Description	Spare part number	Customer replaceable?
12	HP BladeSystem p-Class sleeve board	361746-001	Yes
13	Air baffle (dual-core processor systems only)	398028-001	Yes
14	Cable kit *	381805-001	Yes
	a) Power button/LED cable	—	—
	b) Hard drive cable	—	—
15	Replacement battery, 3-V lithium *	234556-001	Yes
16	Local I/O cable *	355935-001	Yes

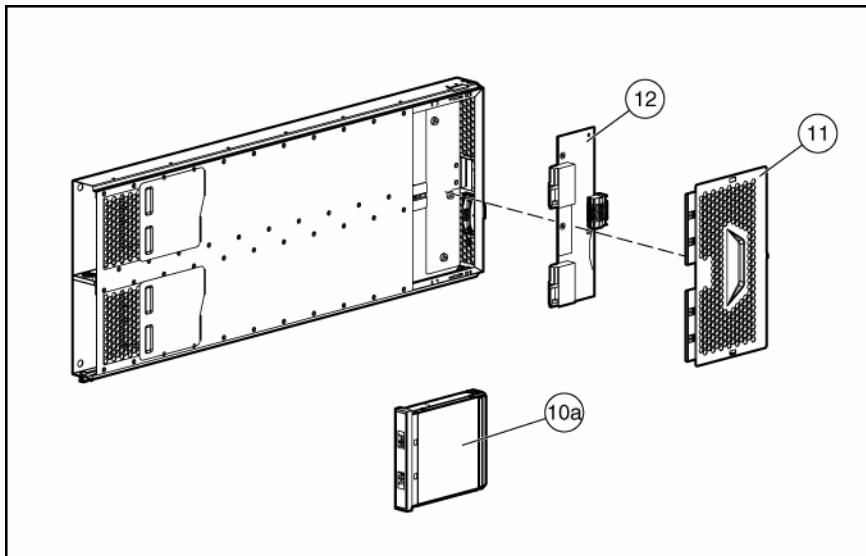
\*Not shown

## SAS models

### Server blade exploded view



# HP BladeSystem p-Class sleeve and blanks exploded view



## Spare parts list (SAS models)

**NOTE:** Always retain the server blade handle. The handle contains a serial number that maintains the original server blade warranty.

Item	Description	Spare part number	Customer replaceable?
<b>Mechanical components</b>			
1	System board assembly, with two dual-core heatsinks and LED board	404677-001	Yes
<b>System components</b>			
2	Processor	—	—
	a) 1.8-GHz AMD Opteron™ dual-core	395083-001	Yes
	b) 2.2-GHz AMD Opteron™ dual-core	395085-001	Yes
	c) 2.4-GHz AMD Opteron™ dual-core	414452-001	Yes
3	Fan assembly	361748-001	Yes
4	NIC riser board, mezzanine	381816-001	Yes
5	Power converter module	361752-001	Yes
<b>Memory</b>			
6	DIMMs	—	—
	a) DIMM, 512-MB, PC3200 DDR 400-MHz SDRAM	381817-001	Yes
	b) DIMM, 1-GB, PC3200 DDR 400-MHz SDRAM	381818-001	Yes
	c) DIMM, 2-GB, PC3200 DDR 400-MHz SDRAM	381819-001	Yes
	d) DIMM, 4-GB, PC2700 DDR 333-MHz SDRAM	416258-001	Yes
<b>Miscellaneous</b>			

Item	Description	Spare part number	Customer replaceable?
7	Heatsink, dual-core processor	396768-001	Yes
8	SAS controller	403624-001	Yes
9	Hard drives	—	—
	a) 36-GB SAS	404784-001	Yes
	b) 72-GB SAS	404785-001	Yes
	c) 146-GB SAS	437862-001	Yes
10	Hardware kit	404678-001	Yes
	a) 3U server blade blank	—	—
	b) Drive cage assembly *	—	—
	c) Latch release, spring, and screw *	—	—
11	HP BladeSystem p-Class sleeve access panel	361881-001	Yes
12	HP BladeSystem p-Class sleeve board	361746-001	Yes
13	Air baffle (dual-core processor systems only)	398028-001	Yes
14	Cable kit *	403623-001	Yes
	a) Power button/LED cable	—	—
	b) Hard drive cable	—	—
15	Replacement battery, 3-V lithium *	234556-001	Yes
16	Local I/O cable *	355935-001	Yes

\*Not shown

# Removal and replacement procedures

## In this section

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## Safety considerations

Before performing service procedures, review all the safety information.

## Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

## Rack warnings and cautions

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**WARNING:** To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
- The full weight of the rack rests on the leveling jacks.
- The stabilizing feet are attached to the rack if it is a single-rack installation.
- The racks are coupled together in multiple-rack installations.
- Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.

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**WARNING:** To reduce the risk of personal injury or equipment damage when unloading a rack:

- At least two people are needed to safely unload the rack from the pallet. An empty 42U rack can weigh as much as 115 kg (253 lb), can stand more than 2.1 m (7 ft) tall, and may become unstable when being moved on its casters.
- Never stand in front of the rack when it is rolling down the ramp from the pallet. Always handle the rack from both sides.

---



**WARNING:** This server blade enclosure is very heavy. To reduce the risk of personal injury or damage to the equipment:

- Observe local occupational health and safety requirements and guidelines for manual material handling.
- Get help to lift and stabilize the product during installation or removal, especially when the product is not fastened to the rails. When the server blade enclosure weighs more than 22.5 kg (50 lb), at least two people must lift the server blade enclosure into the rack together. A third person may be required to help align the server blade enclosure if the server blade is installed higher than chest level.
- Use caution when installing the server blade enclosure in or removing the server blade enclosure from the rack; it is unstable when not fastened to the rails.

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**WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

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## Preparation procedures

To access some components and perform certain service procedures:

- Back up all critical data.
- Power down the server blade (on page 13).

For non-hot-plug service procedures, use the methods available to power down the server blade.

- Remove the server blade (on page 13).

Access to internal server blade components requires removal from the server blade enclosure and HP ProLiant p-Class sleeve.

## Power down the server blade

Before powering down the server blade, always back up critical data.

Power down the server blade using either of the following methods:

- Press the Power On/Standby button on the server blade front panel.

Be sure that the server blade is in standby mode by observing that the power LED is amber. This process may take 30 seconds, during which time some internal circuitry remains active.

- Use the virtual power button feature in iLO.

After initiating a manual or virtual power down command, be sure that the server blade goes into standby mode by observing that the power LED is amber.



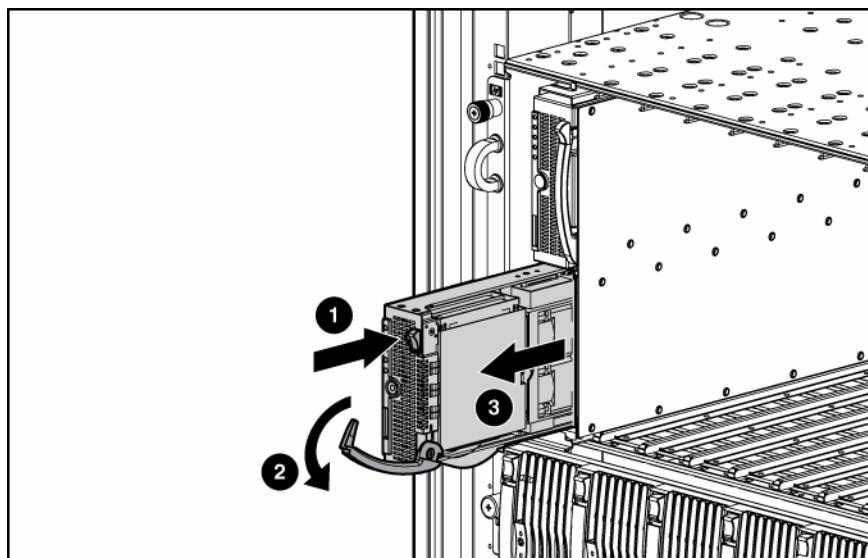
**IMPORTANT:** When the server blade is in standby mode, auxiliary power is still being provided. To remove all power from the server blade, remove the server blade from the server blade enclosure. Removing the sleeve from the server blade enclosure is not necessary.



**IMPORTANT:** Remote power procedures require the most recent firmware for the power enclosure and server blade enclosure management modules. For the most recent firmware, refer to the HP website (<http://www.hp.com/go/support>).

## Remove the server blade

1. Back up all server blade data.
2. Power down the server blade (on page 13).
3. Remove the server blade from the HP BladeSystem p-Class sleeve.



**WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.



**CAUTION:** To prevent damage to electrical components, properly ground the server blade before beginning any installation procedure. Improper grounding can cause ESD.

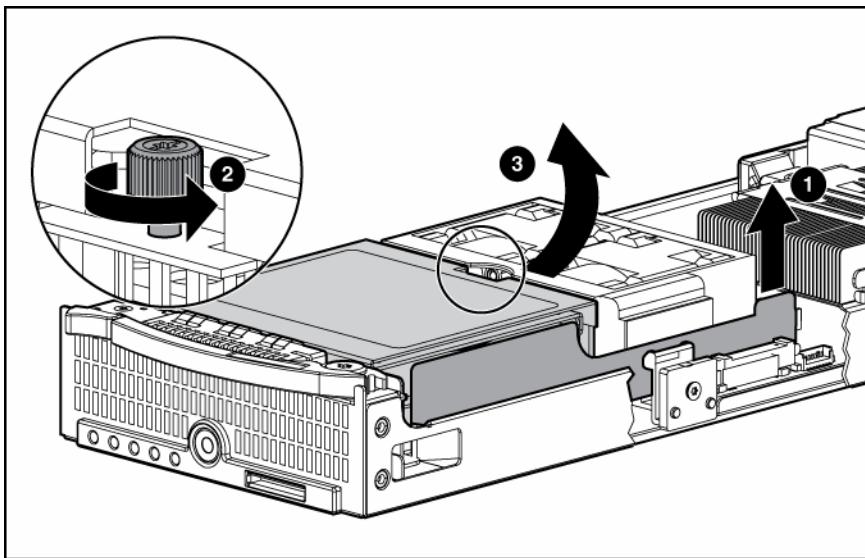
# ATA drive cage assembly

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).
3. Remove the drive cage assembly.



**IMPORTANT:** Be sure to disconnect the hard drive cable from the system board before removing the drive cage assembly.



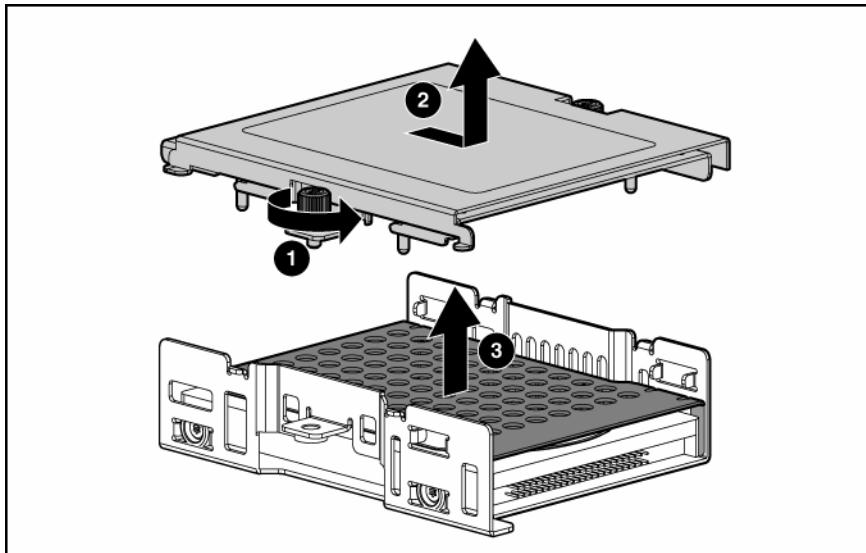
To replace the component, reverse the removal procedure.

# ATA hard drive option

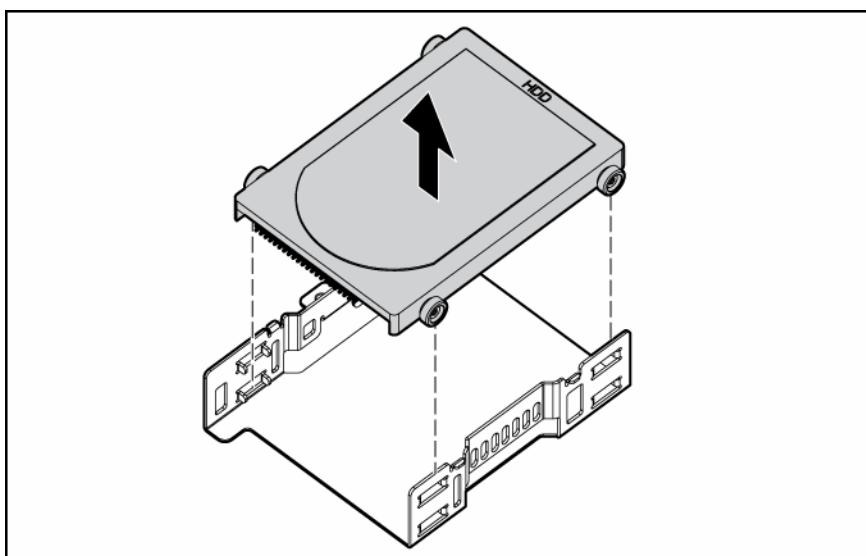
To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).
3. Remove the ATA drive cage assembly (on page 14).

4. Remove the cover plate and, if necessary, the center plate.



5. Remove the drive from the cage.



To replace the component, reverse the removal procedure.

The drive cage assembly lower drive bay is designated as the primary hard drive bay and must be populated first.

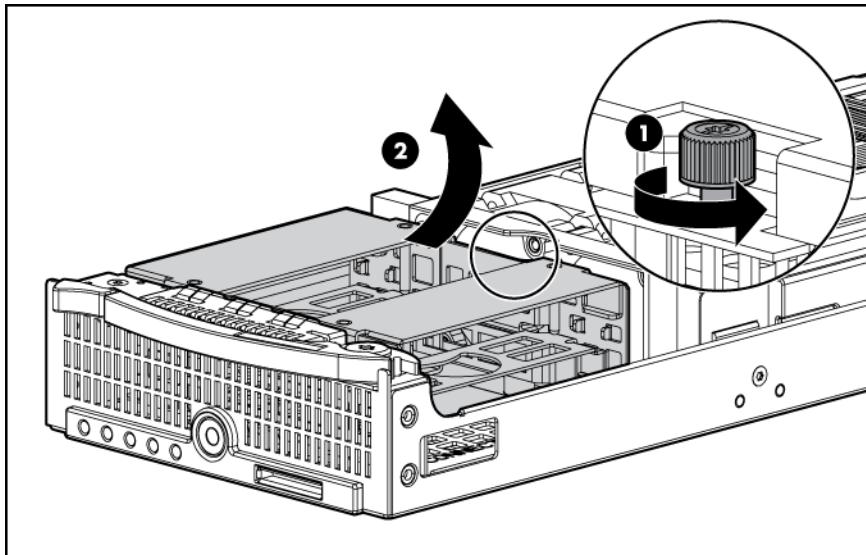
Before installing a hard drive, be sure the jumper on the hard drive is set to CS so that the drive device ID is determined by the hard drive connection to the hard drive cable.

## SAS drive cage assembly

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).

3. Remove the drive cage assembly.

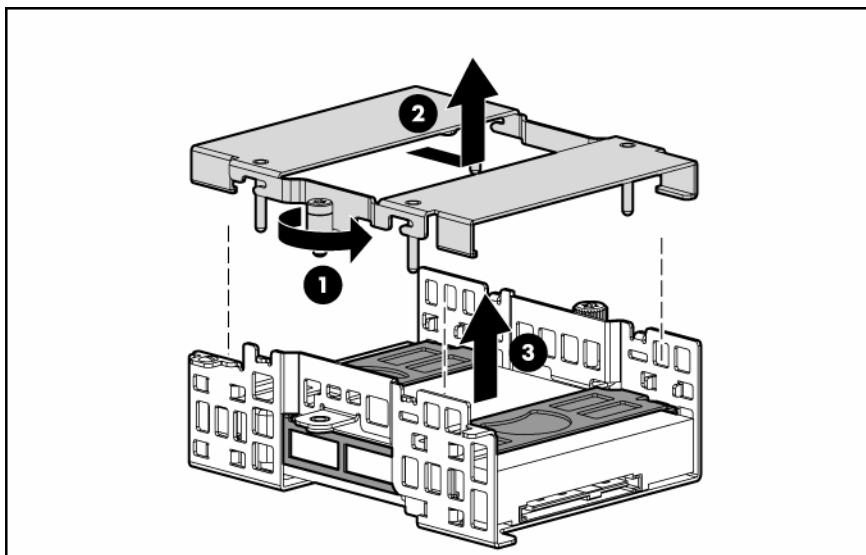


To replace the component, reverse the removal procedure.

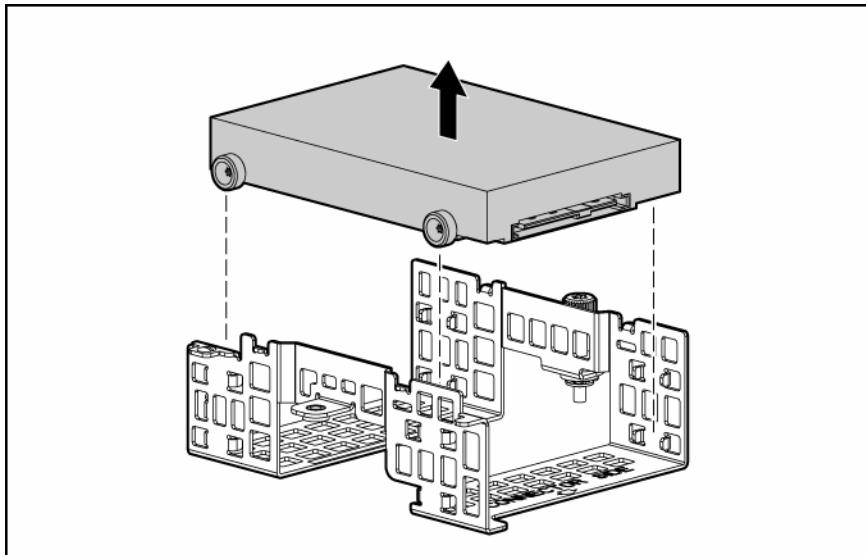
## SAS hard drive option

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).
3. Remove the SAS drive cage assembly (on page 15).
4. Remove the cover plate and, if necessary, the center plate.



5. Remove the hard drive.



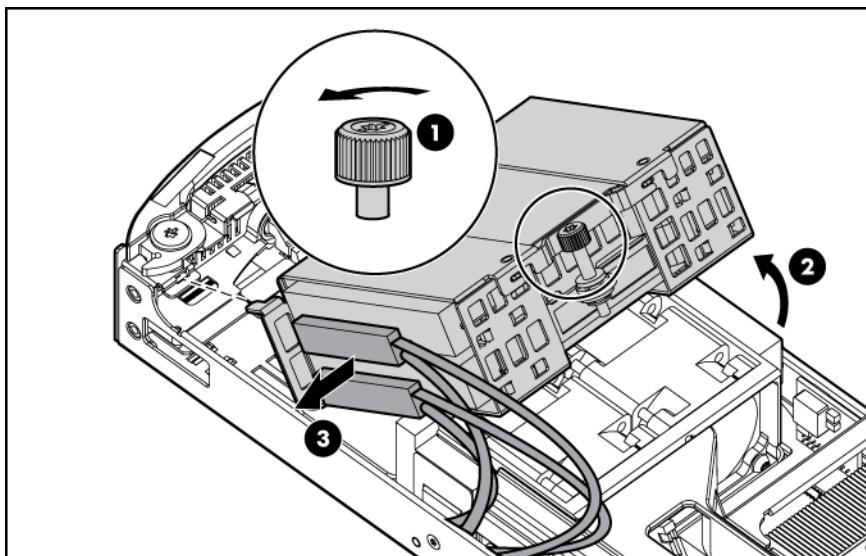
To replace the component, reverse the removal procedure.

The drive cage assembly lower drive bay is designated as the primary hard drive bay and must be populated first.

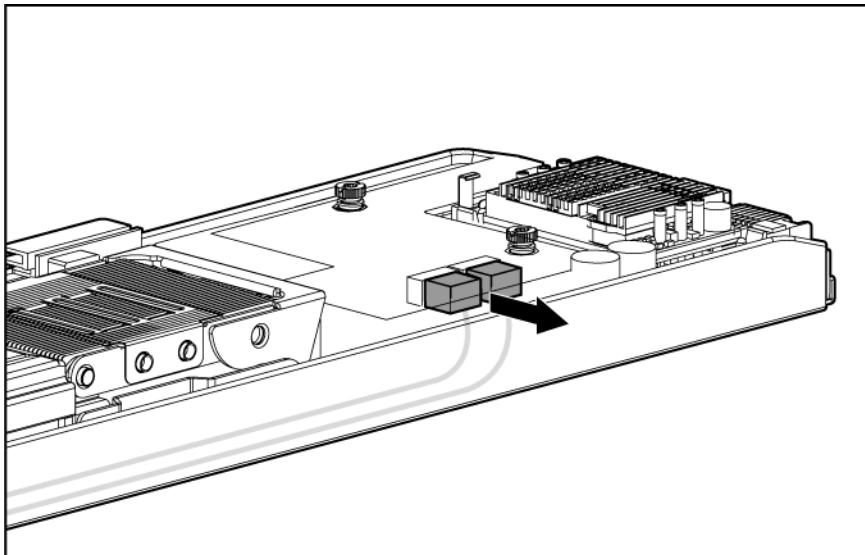
## SAS controller and cables

To remove the component:

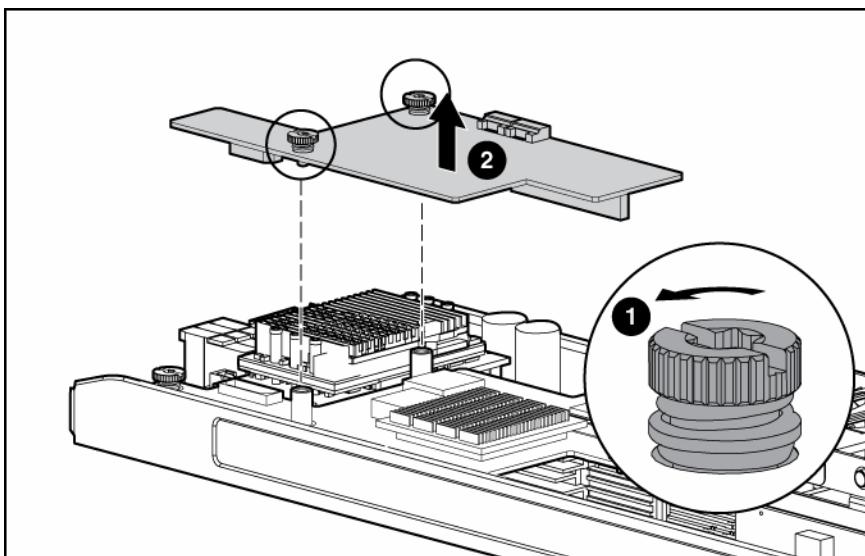
1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).
3. Disconnect the hard drive cables from the hard drives.



4. Disconnect the cables from the controller.



5. Remove the SAS controller.



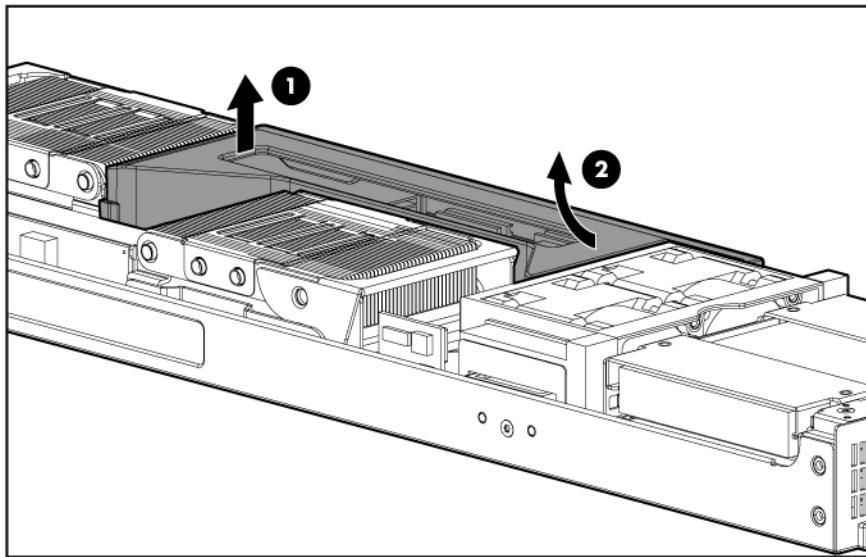
To replace the component, reverse the removal procedure.

## Air baffle (dual-core processor models only)

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).

3. Remove the air baffle.



**CAUTION:** To ensure proper airflow, always install the air baffle when installing a dual-core processor.

To replace the component, reverse the removal procedure.

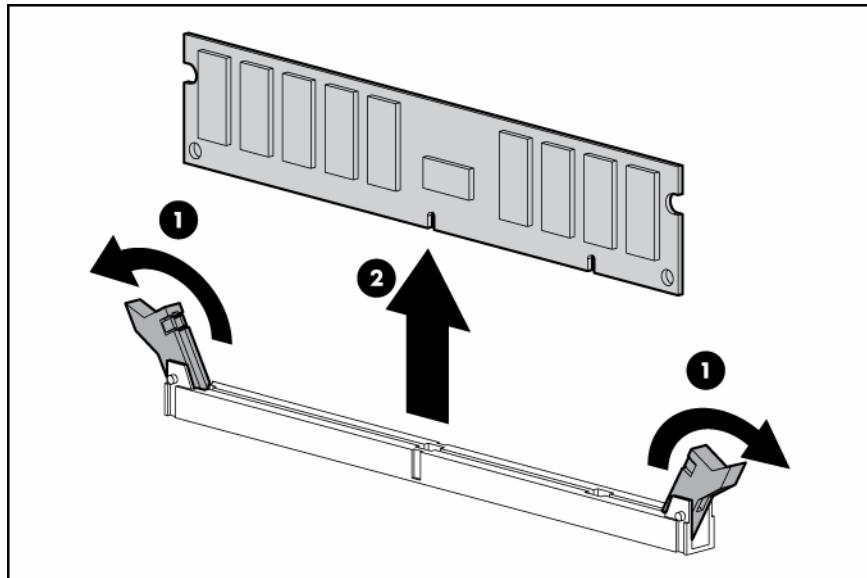
## DIMMs

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).
3. For DIMM bank B, remove the air baffle. ("Air baffle (dual-core processor models only)" on page 18)

**NOTE:** Dual-core processor models only.

4. Remove the DIMM.



To replace the component, reverse the removal procedure.

 **CAUTION:** Use only HP DIMMs. DIMMs from other sources may adversely affect data integrity.

Observe the following DIMM installation guidelines:

- All DIMMs must be PC3200 DDR 400-MHz SDRAM DIMMs, or PC2700 DDR 333-MHz SDRAM DIMMs.
- Both DIMM slots in a bank must be populated.
- Both DIMMs in a bank must be identical.
- DIMM bank A must always be populated.
- DIMM bank B is only active when processor socket 2 is populated.
- Each processor should have a populated memory bank, for best performance.

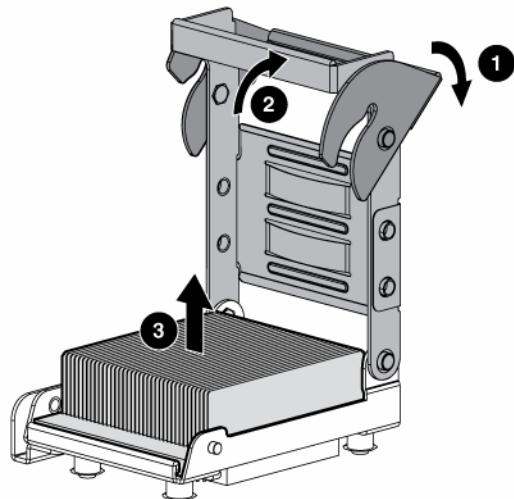
## Processor

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).

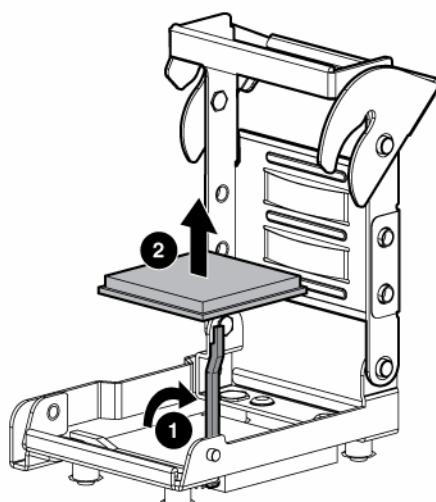
 **CAUTION:** Removal of the processor or heatsink renders the thermal layer between the processor and heatsink useless. A new heatsink must be ordered and installed before reinstalling the processor.

3. Open the processor cage and remove the heatsink.



**IMPORTANT:** Processor socket 1 must always be populated. If processor socket 1 is empty, the server blade does not power up.

4. Remove the processor.



To replace the component:

1. Install the processor.



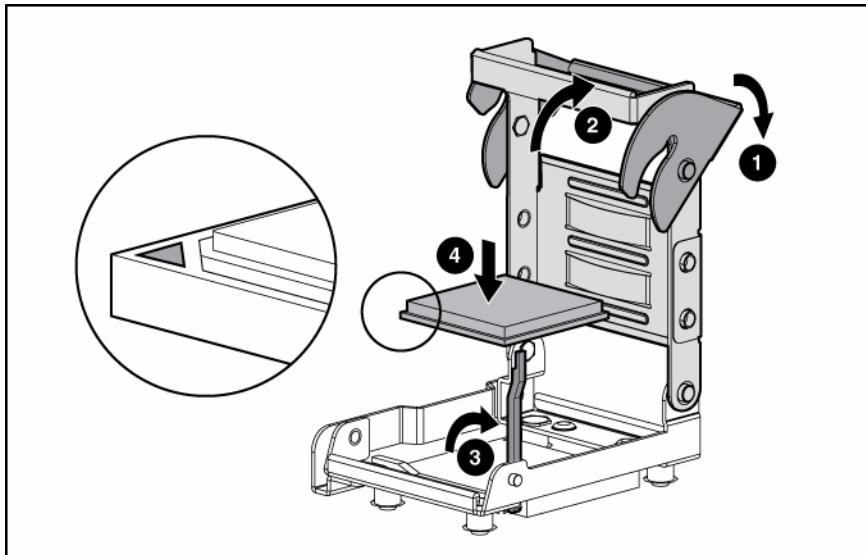
**CAUTION:** Be sure that the processor socket locking lever is open before installing the processor into the socket.



**CAUTION:** The processor is designed to fit one way into the socket. Use the alignment guides on the processor and socket to properly align the processor with the socket. Refer to the server blade hood label for specific instructions.

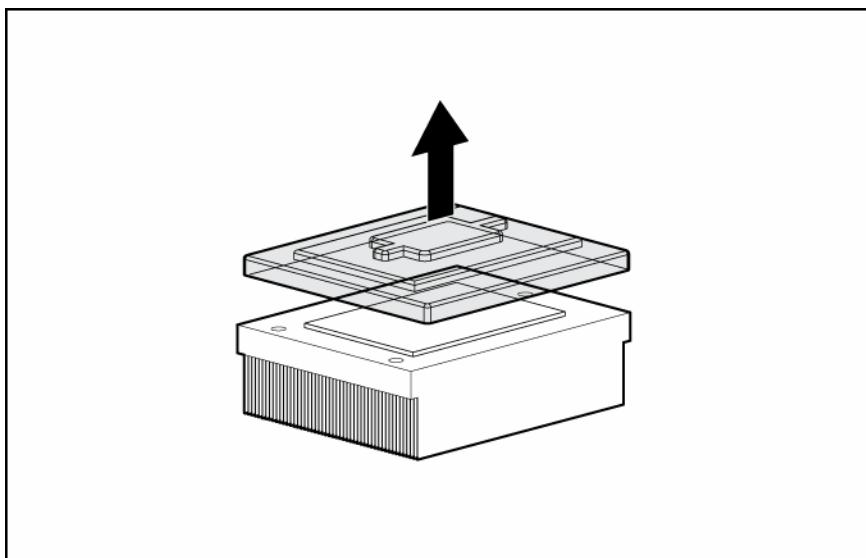


**CAUTION:** Do not bend or damage the pins beneath the processor.

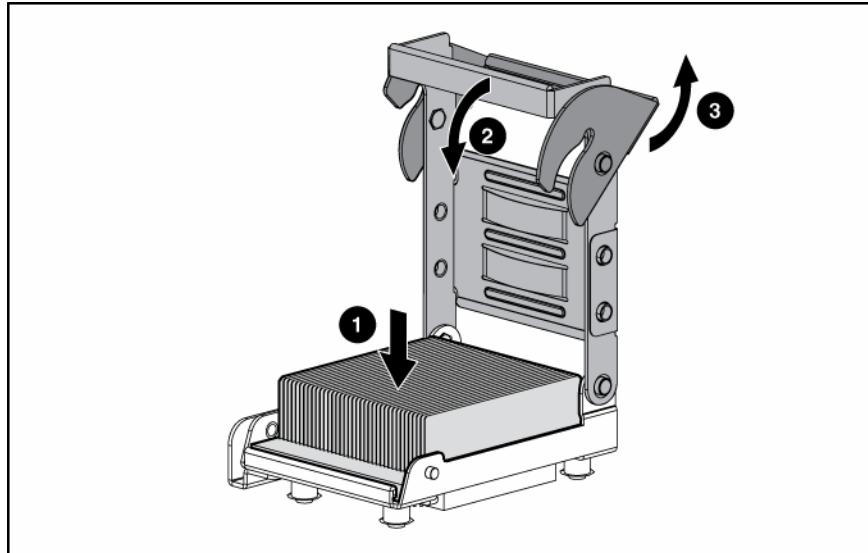


**CAUTION:** Be sure that the processor socket locking lever is closed after the processor is installed. The lever should close without resistance. Forcing the lever closed can damage the processor and socket, requiring system board replacement.

2. Close the processor locking lever.
3. Remove the protective cover from the thermal interface.



4. Insert the heatsink and close the processor cage. Closing the processor cage aligns the heatsink.



**CAUTION:** To ensure proper cooling of the dual-core processor, the old air baffle must be replaced when upgrading from a single-core processor to a dual-core processor.

**IMPORTANT:** To ensure proper cooling, be sure the correct processor air baffle is installed at all times.

## Fan assembly

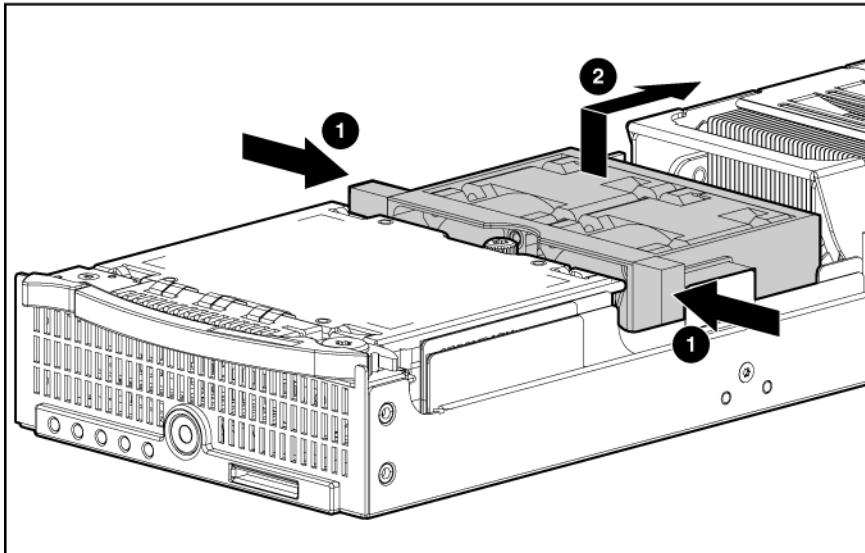
To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).
3. Remove the air baffle ("Air baffle (dual-core processor models only)" on page 18).

**NOTE:** Dual-core processor models only.

4. Disconnect the fan assembly cables from the system board.

5. Remove the fan assembly.

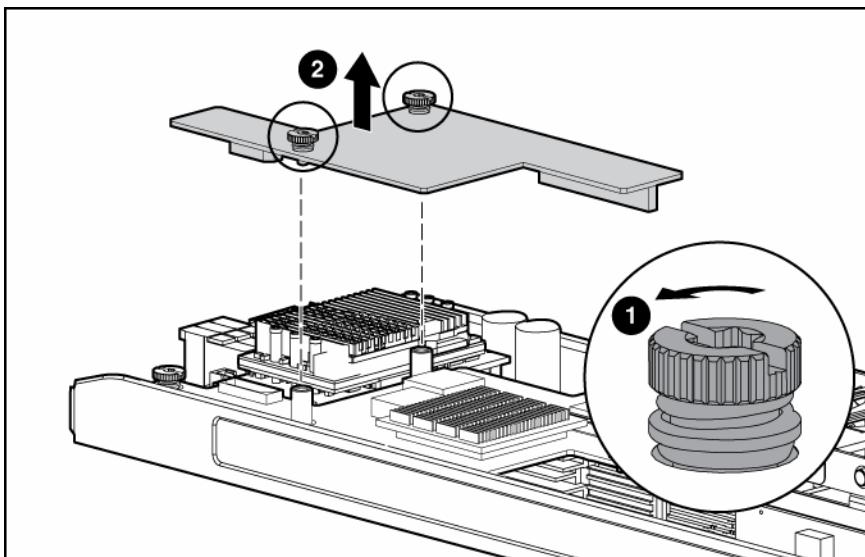


To replace the component, reverse the removal procedure.

## Dual Port Fibre Channel Adapter (2 GB)

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).
3. Remove the FC adapter.



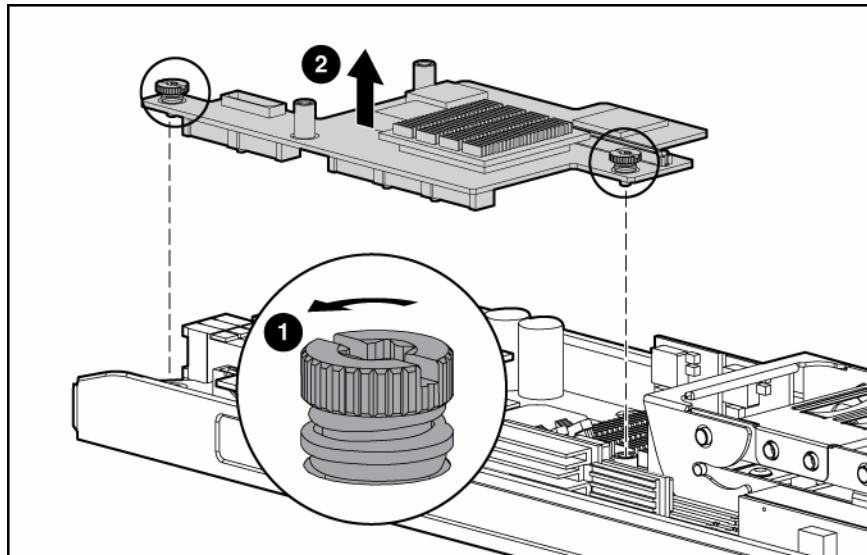
To replace the component, reverse the removal procedure.

## NIC riser board

To remove the component:

1. Power down the server blade (on page 13).

2. Remove the server blade (on page 13).
3. Remove the Dual Port Fibre Channel Adapter, if installed ("Dual Port Fibre Channel Adapter (2 GB)" on page 24).
4. Remove the NIC riser board.



To replace the component, reverse the removal procedure.

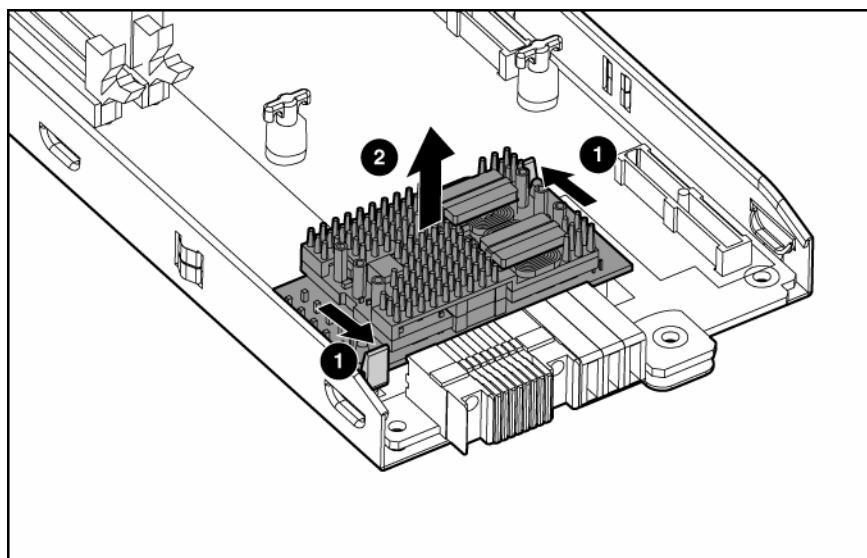
## Power converter module

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).
3. Remove the power converter module.



**WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

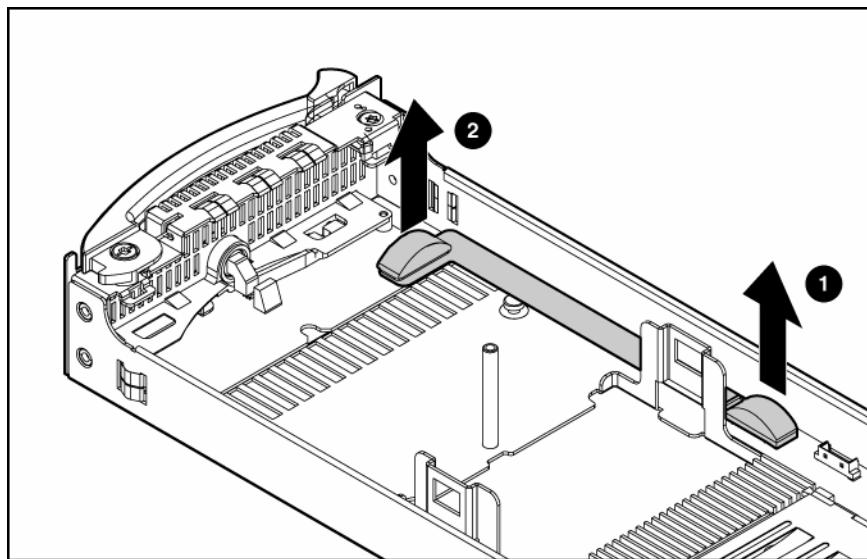


To replace the component, reverse the removal procedure.

## Power button/LED cable

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).
3. Remove the drive cage assembly ("ATA drive cage assembly" on page 14, "SAS drive cage assembly" on page 15).
4. Remove the air baffle, if necessary ("Air baffle (dual-core processor models only)" on page 18).
5. Remove the fan assembly ("Fan assembly" on page 23).
6. Remove the power button/LED cable.



To replace the component, reverse the removal procedure.

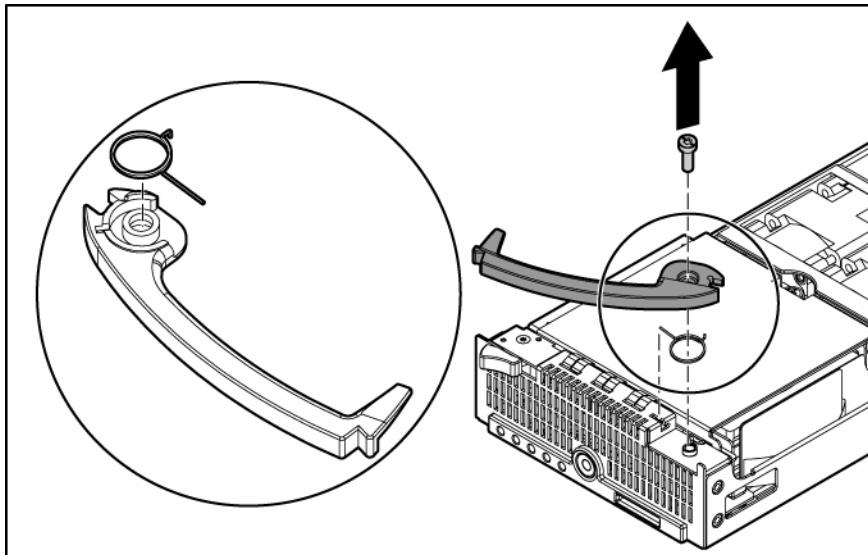
## Server blade handle

The server blade handle contains a serial number that maintains the original server blade warranty. When replacing a system board assembly, remove the server blade handle and install it on the replacement system board assembly.

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).

3. Remove the server blade handle.



To replace the component:

1. Place the server blade handle over the spring on the server blade.
2. Install the screw to secure the handle and spring.

## System board assembly

The system board assembly consists of the system board, the chassis, the power button/LED board, and the two cables.

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).
3. Remove the drive cage assembly ("ATA drive cage assembly" on page 14, "SAS drive cage assembly" on page 15).
4. Remove all DIMMs ("DIMMs" on page 19).
5. Remove the processors ("Processor" on page 20).
6. Remove the fan assembly ("Fan assembly" on page 23).
7. Remove the Dual Port Fibre Channel Adapter, if installed ("Dual Port Fibre Channel Adapter (2 GB)" on page 24).
8. Remove the NIC riser board ("NIC riser board" on page 24).

**NOTE:** Always retain the server blade handle. The handle contains a serial number that maintains the original server blade warranty.

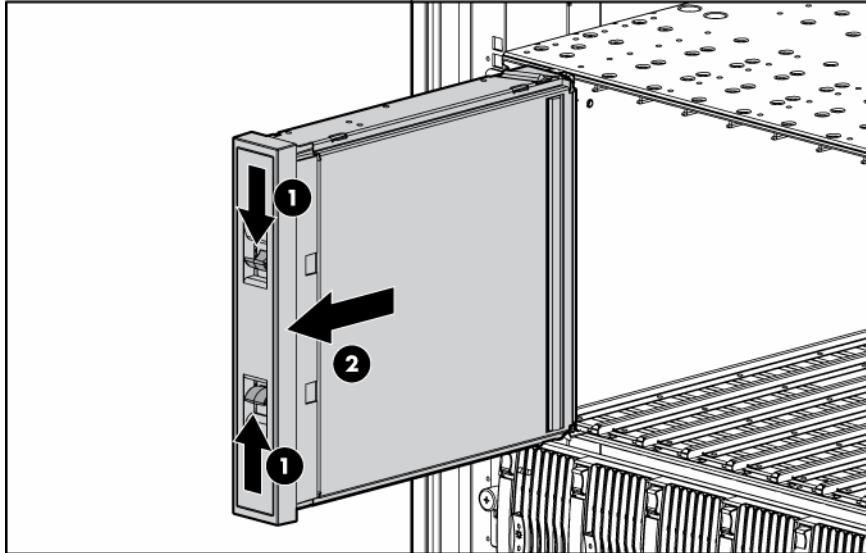
9. Remove the server blade handle ("Server blade handle" on page 26).

To replace the component, reinstall all removed subcomponents in the replacement system board assembly.

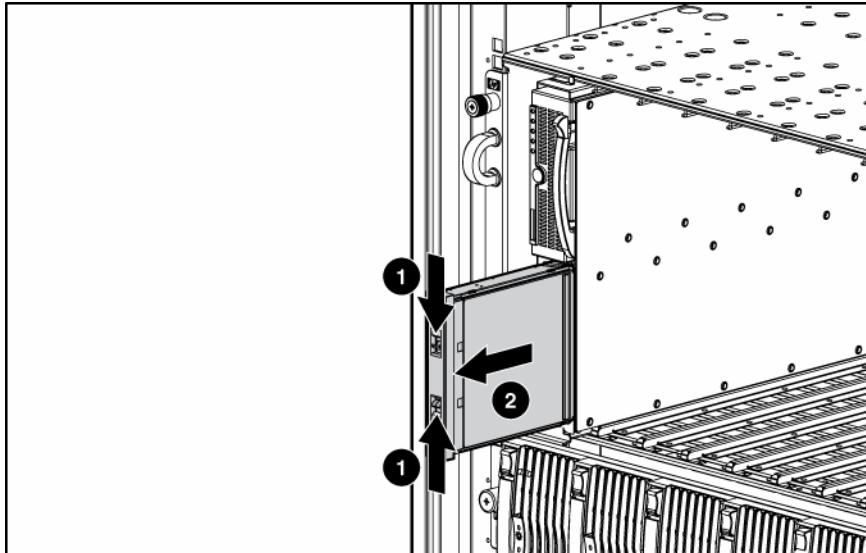
# Server blade blanks

⚠ **CAUTION:** To prevent improper cooling and thermal damage, do not operate the server blade enclosure unless all bays are populated with either a component or a blank.

To remove the 6U server blade blank:



To remove the 3U server blade blank:

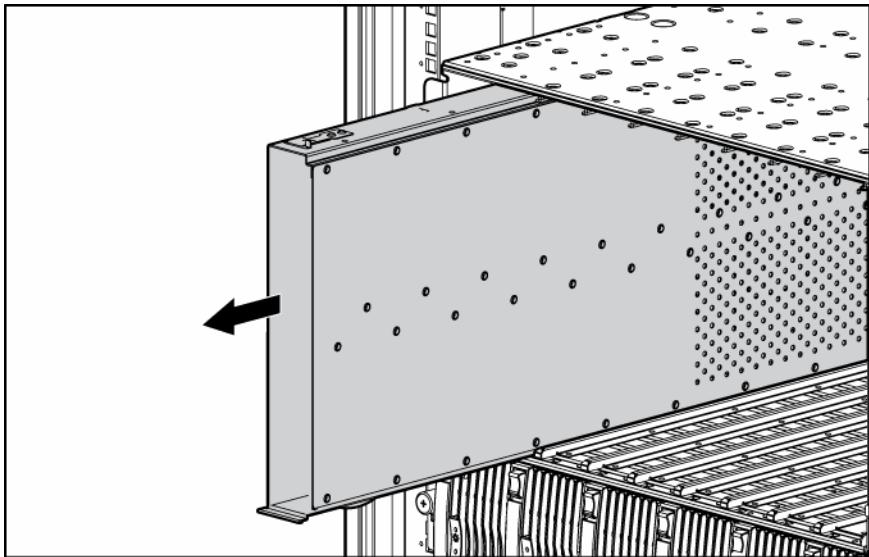


# HP BladeSystem p-Class sleeve

To remove the component:

1. Power down the server blade (on page 13).
2. Remove the server blade (on page 13).
3. Remove the second server blade, if installed.
4. Remove any 3U server blade blanks, if installed ("Server blade blanks" on page 28).

5. Remove the HP BladeSystem p-Class sleeve.

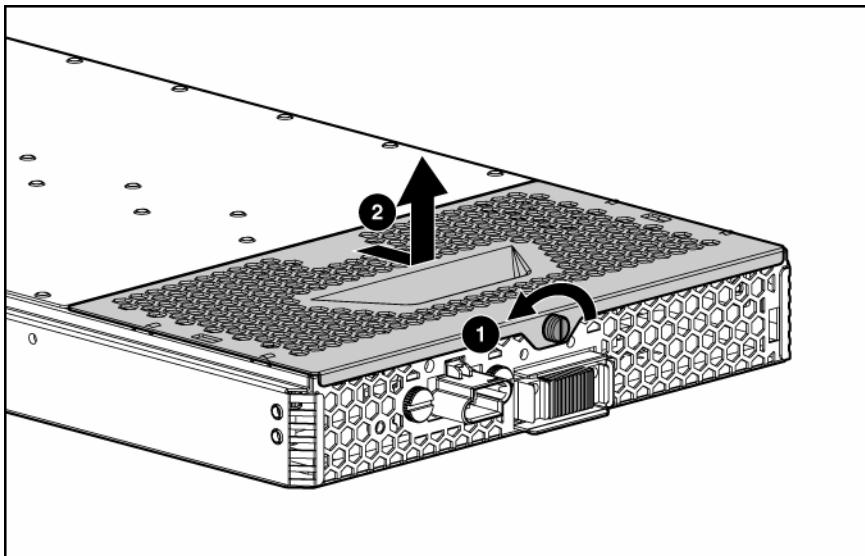


To replace the component, reverse the removal procedure.

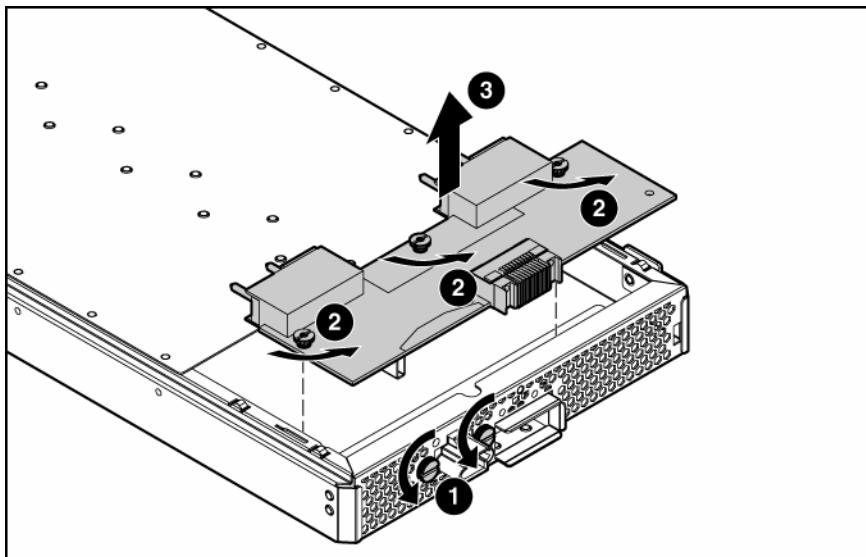
## HP BladeSystem p-Class sleeve board

To remove the component:

1. Remove the HP BladeSystem p-Class sleeve ("HP BladeSystem p-Class sleeve" on page 28).
2. Remove the HP BladeSystem p-Class sleeve access panel.



3. Remove the HP BladeSystem p-Class sleeve board.



To replace the component, reverse the removal procedure.

# Diagnostic tools

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## Troubleshooting resources

The *HP ProLiant Servers Troubleshooting Guide* provides simple procedures for resolving common problems as well as a comprehensive course of action for fault isolation and identification, error message interpretation, issue resolution, and software maintenance.

To obtain the guide, refer to any of the following sources and then select the *HP ProLiant Servers Troubleshooting Guide*:

- The server-specific Documentation CD
- The Business Support Center on the HP website (<http://www.hp.com/support>). Navigate to the server technical support page. Under self-help resources, select **ProLiant Troubleshooting Guide**.
- The Technical Documentation website (<http://www.docs.hp.com>). Select **Enterprise Servers, Workstations and Systems Hardware**, and then the appropriate server.

## HP Insight Diagnostics

HP Insight Diagnostics is a proactive server blade management tool, available in both offline and online versions, that provides diagnostics and troubleshooting capabilities to assist IT administrators who verify server blade installations, troubleshoot problems, and perform repair validation.

HP Insight Diagnostics Offline Edition performs various in-depth system and component testing while the OS is not running. To run this utility, launch the SmartStart CD.

HP Insight Diagnostics Online Edition is a web-based application that captures system configuration and other related data needed for effective server blade management. Available in Microsoft® Windows® and Linux versions, the utility helps to ensure proper system operation.

For more information or to download the utility, refer to the HP website (<http://www.hp.com/servers/diags>).

## Survey Utility

Survey Utility, a feature within HP Insight Diagnostics (on page 31), gathers critical hardware and software information on ProLiant server blades.

This utility supports operating systems that may not be supported by the server blade. For operating systems supported by the server blade, refer to the HP website (<http://www.hp.com/go/supportos>).

If a significant change occurs between data-gathering intervals, the Survey Utility marks the previous information and overwrites the Survey text files to reflect the latest changes in the configuration.

Survey Utility is installed with every SmartStart-assisted installation or can be installed through the HP PSP.

---

**NOTE:** The current version of SmartStart provides the memory spare part numbers for the server blade. To download the latest version, see the HP website (<http://www.hp.com/go/ssdownloads>).

---

## Integrated Management Log

The IML records hundreds of events and stores them in an easy-to-view form. The IML timestamps each event with 1-minute granularity.

You can view recorded events in the IML in several ways, including the following:

- From within HP SIM
- From within Survey Utility (on page 31)
- From within operating system-specific IML viewers
  - For NetWare: IML Viewer
  - For Windows®: IML Viewer
  - For Linux: IML Viewer Application
- From within the iLO user interface
- From within HP Insight Diagnostics (on page 31)

For more information, refer to the Management CD in the HP ProLiant Essentials Foundation Pack.

## HP Instant Support Enterprise Edition

ISEE is a proactive remote monitoring and diagnostic tool to help manage your systems and devices, a feature of HP support. ISEE provides continuous hardware event monitoring and automated notification to identify and prevent potential critical problems. Through remote diagnostic scripts and vital system configuration information collected about your systems, ISEE enables fast restoration of your systems. Install ISEE on your systems to help mitigate risk and prevent potential critical problems.

For more information on ISEE, refer to the HP website ([http://www.hp.com/hps/hardware/hw\\_enterprise.html](http://www.hp.com/hps/hardware/hw_enterprise.html)).

To download HP ISEE, visit the HP website ([http://www.hp.com/hps/hardware/hw\\_downloads.html](http://www.hp.com/hps/hardware/hw_downloads.html)).

For installation information, refer to the HP ISEE Client Installation and Upgrade Guide ([http://ftp.hp.com/pub/services/hardware/info/isee\\_client.pdf](http://ftp.hp.com/pub/services/hardware/info/isee_client.pdf)).

## Web-Based Enterprise Service

WEBES enables administrators to manage hardware events proactively, either locally or online. The service provides real-time multiple event analysis, crash analysis, and notification, locally through SMTP

and remotely through ISEE for OpenVMS, Tru64, and Microsoft® Windows® operating system binary error logs.

For more information, refer to the HP website (<http://h18000.www1.hp.com/support/svctools/>).

## Open Services Event Manager

OSEM is a standalone tool that performs real-time reactive and proactive service event filtering, analysis, and notification. The tool gathers event data from SNMP traps or information provided over an HTTP interface and notifies an administrator or HP through SMTP and ISEE.

For more information, refer to the HP website (<http://h18000.www1.hp.com/support/svctools/>).

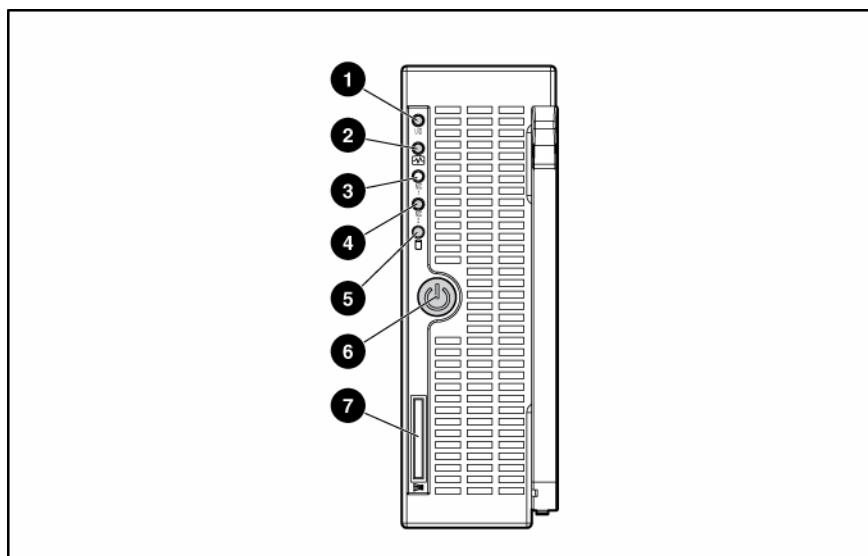
# Component identification

## In this section

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Server blade enclosure bay numbering .....	38
Server blade enclosure compatibility .....	39

## Server blade components

### Front panel components and LEDs



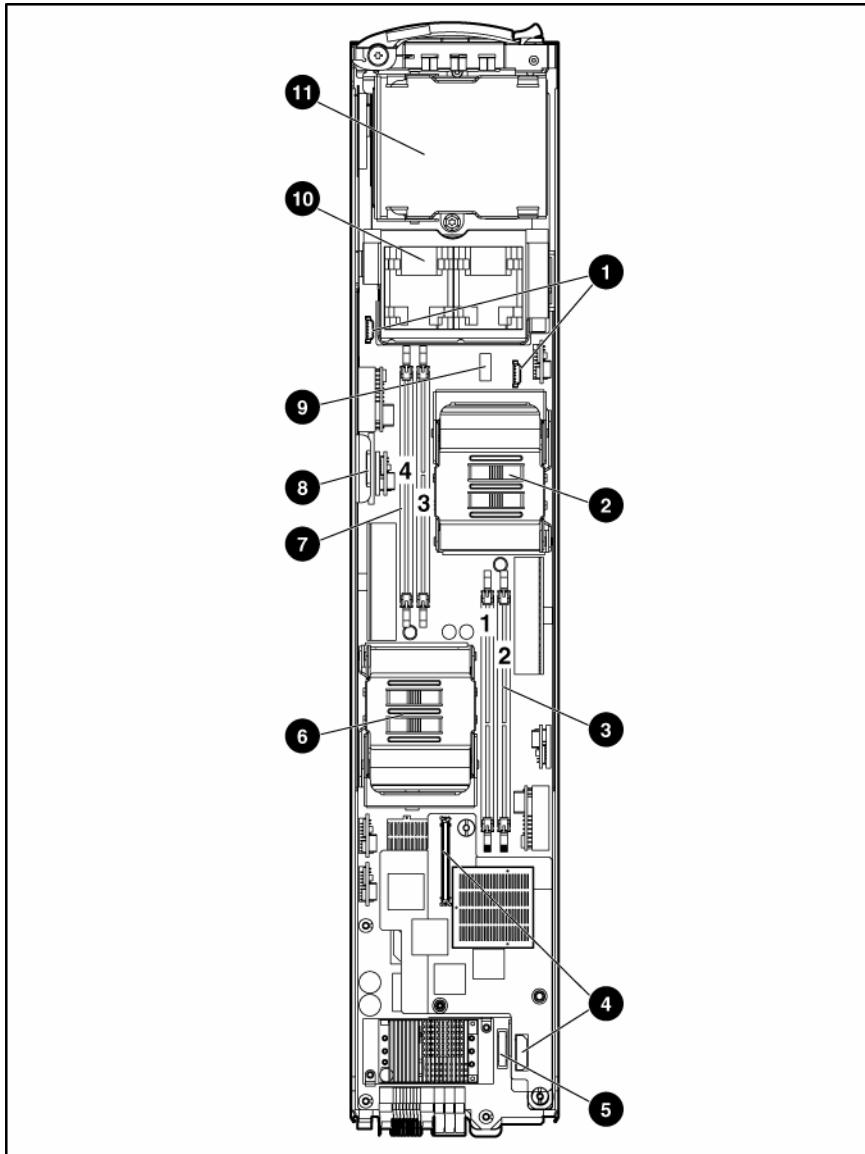
Item	Description	Status
1	UID LED	Blue = Identified Blue flashing = Active remote management Off = No active remote management
2	Internal system health LED	Green = Normal Green flashing = Booting Amber = Degraded condition Red = Critical condition
3	NIC 1 LED*	Green = Network linked Green flashing = Network activity Off = No link or activity

Item	Description	Status
4	NIC 2 LED*	Green = Network linked Green flashing = Network activity Off = No link or activity
5	Hard drive activity LED	Green/Flashing = Activity Off = No activity
6	Power On/Standby button LED	Green = On Amber = Standby (auxiliary power available) Off = Off
7	Local I/O port**	—

\* Actual NIC enumeration depends on several factors, including the operating system installed on the server blade.

\*\* The Local I/O port is used with the local I/O cable for local management and for connecting external devices to the server blade, such as USB keyboard, USB mouse, video monitor, USB diskette drive, and USB CD-ROM drive.

## Internal components

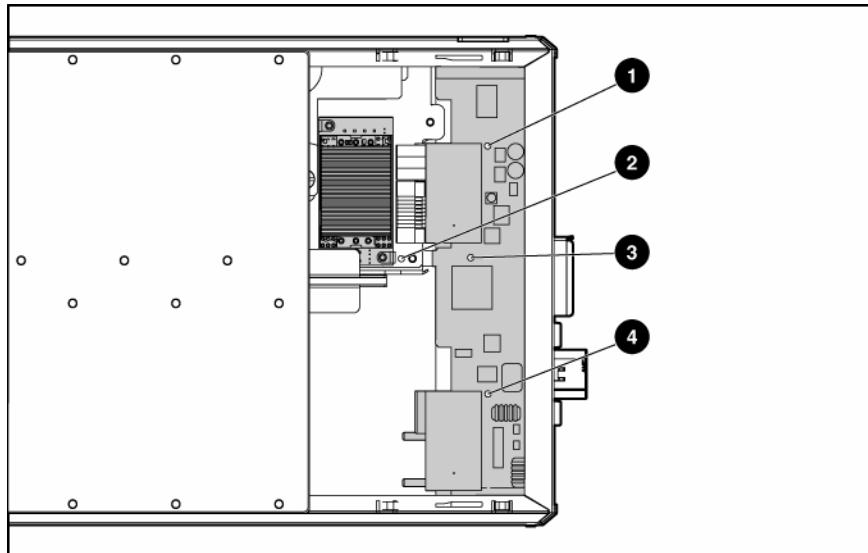


Item	Description
1	Fan assembly connectors (2)
2	Processor socket 2
3	DIMM bank A (populated)
4	Adapter card connectors (2)
5	Battery
6	Processor socket 1 (populated)
7	DIMM bank B
8	Hard drive cable connector
9	System maintenance switch (SW1)
10	Fan assembly
11	Hard drive cage

## System maintenance switch

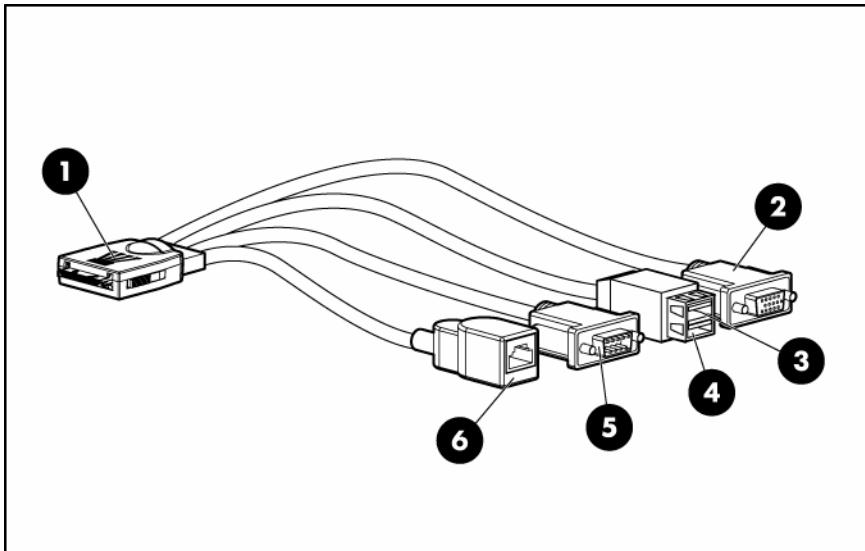
Position	Default	Function
S1	Off	Off = iLO security is enabled. On = iLO security is disabled.
S2	Off	Off = System configuration can be changed. On = System configuration is locked.
S3	Off	Reserved
S4	Off	Reserved
S5	Off	Off = Power-on password is enabled. On = Power-on password is disabled.
S6	Off	Off = No function On = Clear configuration
S7, S8	Off, Off	Reserved

## Sleeve board and server blade LED locations



Item	Description
1	Blade sleeve power LED (CR6)
2	Power converter module LED (CR1)
3	FC LED (CR3)
4	Blade sleeve power LED (CR7)

## Local I/O cable



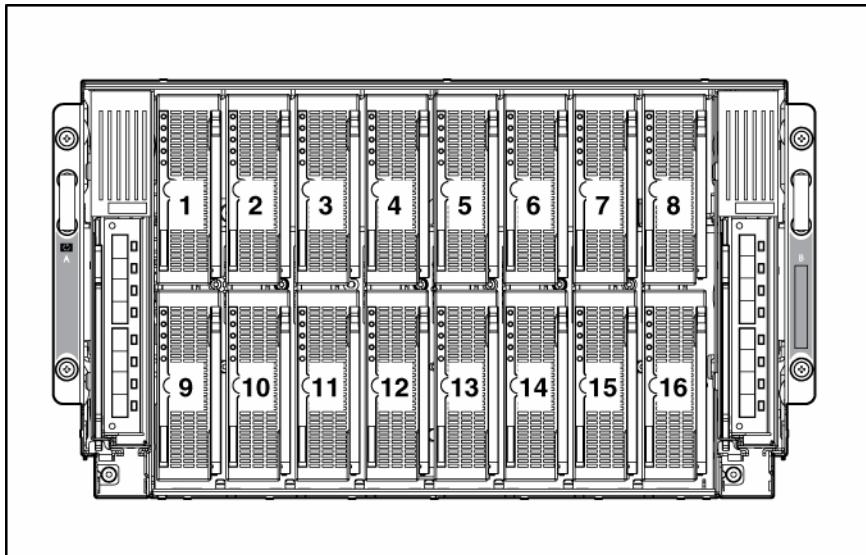
Item	Connector	Description
1	Local I/O	For connecting to the local I/O port on the server blade front panel
2	Video	For connecting a video monitor
3	USB 1	For connecting a USB device
4	USB 2	For connecting a USB device
5	Serial	For trained personnel to connect a null-modem serial cable and perform advanced diagnostic procedures
6	iLO RJ-45 (10/100 Ethernet)	For connecting an Ethernet to the server blade iLO interface from a client device

## Server blade enclosure bay numbering

Each server blade enclosure requires a pair of interconnect modules to provide network access for data transfer. Interconnect modules reside in the far right and far left bays of the server blade enclosure. Be sure to review server blade bay numbering to determine the HP ProLiant BL35p Server Blade external network connections on the interconnects.

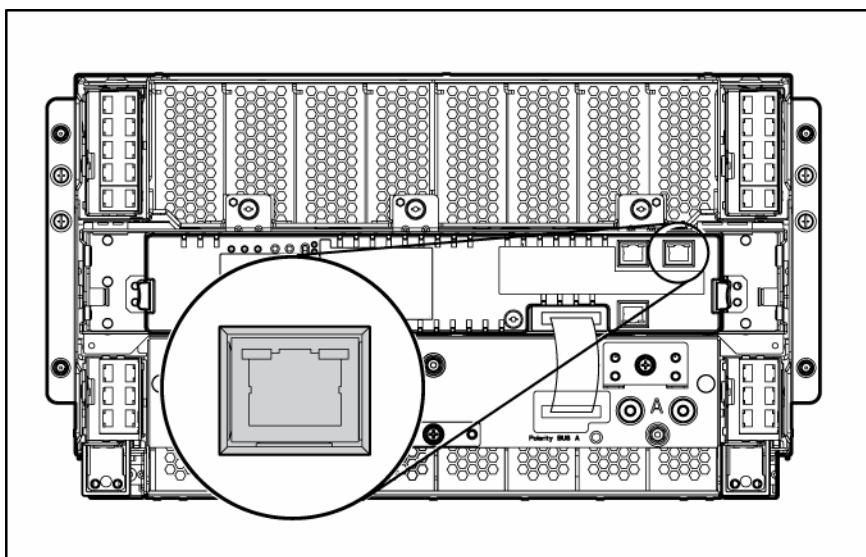


**IMPORTANT:** When looking at the rear of the enclosure, server blade bay numbering is reversed.



## Server blade compatibility

The HP ProLiant BL35p Server Blades require the support of an HP BladeSystem p-Class sleeve in a server blade enclosure with enhanced backplane components (enhanced server blade enclosure). The enhanced server blade enclosure also provides a single rear iLO connector for single-cable remote management of all installed HP ProLiant BL35p Server Blades.



For more information about the enhanced server blade enclosure, refer to the *HP ProLiant BL p-Class Server Blade Enclosure Upgrade Installation Guide* or the *HP ProLiant BL p-Class Server Blade Enclosure Installation Guide*.

# Specifications

## In this section

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## Environmental specifications

Specification	Value
<b>Temperature range*</b>	
Operating	10°C to 35°C (50°F to 95°F)
Shipping	-40°C to 60°C (-40°F to 140°F)
Storage	-20°C to 60°C (-4°F to 140°F)
Maximum wet bulb temperature	30°C (86°F)
<b>Relative humidity (noncondensing)**</b>	
Operating	10% to 90%
Shipping	10% to 90%
Storage	10% to 95%

\* All temperature ratings shown are for sea level. An altitude derating of 1°C per 304.8 m (1.8°F per 1,000 ft) to 3048 m (10,000 ft) is applicable. No direct sunlight allowed. Upper operating limit is 3,048m (10,000 ft) or 70 KPa/10.1 psia. Upper non-operating limit is 9,144 m (30,000 ft) or 30.3 KPa/4.4 psia.

\*\* Storage maximum humidity of 95% is based on a maximum temperature of 45°C (113°F). Altitude maximum for storage corresponds to a pressure minimum of 70 KPa.

## Server blade specifications

Specification	Value
Height	4.1 cm (1.61 in)
Depth	64.4 cm (25.35 in)
Width	12.0 cm (4.72 in)
Weight (maximum)	3.72 kg (8.19 lb)
Weight (no drives installed)	3.52. kg (7.76 lb)

---

# Acronyms and abbreviations

**DDR**

double data rate

**ESD**

electrostatic discharge

**FC**

Fibre Channel

**I/O**

input/output

**iLO**

Integrated Lights-Out

**IML**

Integrated Management Log

**IP**

Internet Protocol

**ISEE**

Instant Support Enterprise Edition

**LED**

light-emitting diode

**NIC**

network interface controller

**OSEM**

Open Services Event Manager

**POST**

Power-On Self Test

**PSP**

ProLiant Support Pack

**RBSU**

ROM-Based Setup Utility

**RIOE**

Remote Insight Lights-Out Edition

**ROM**

read-only memory

**SFP**

small form-factor pluggable

**SIM**

Systems Insight Manager

**SNMP**

Simple Network Management Protocol

**UID**

unit identification

**WEBES**

Web-Based Enterprise Service

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